8th GRADE
MAIN RANGEFINDER
1

**It is important that you show or explain how you solved the problems on this assessment.
If you use a calculator, show how you set up the math.**

1. You are going to the movies. The price of the ticket is $7.50, which includes sales tax.

7.50
7.50
7.50
7.50
7 50
7.50
45.00

Concessions (sales tax included)	
Popcorn	$5.25 per bucket
Pop	$2.50 each
Candy	$2.25 each

a. What is the cost for six people to go to the movie? *Show or explain how you found your answer.* **$45.00**

> **Minimal Understanding
> Of Basic Skills**

b. What is the total cost for six people to go to the movie **and** for each to have one bucket of popcorn, one pop, and one candy? *Show or explain how you found your answer.*

c. The price of the six tickets is what fraction of the total cost for the six people, including concessions? *Show or explain how you found your answer.*

$45.50   45.00
+ .50

d. If you go to a matinee movie, you receive a 15% discount on the price of a ticket. What is the price of **one** matinee ticket? *Show or explain how you found your answer.*

Read problems 2, 3, 4, and 5 on this and the next two pages.
Select three problems to answer. Answer ALL of the parts of the three problems you select to answer.
Cross out the one problem that you do not choose to answer.

2. Data was collected from 7th grade students who completed the Idaho Standards Achievement Test (ISAT) in the fall and spring. The numbers below represent points gained.

Points Gained Per Student

1, 0, 1, 9, 6, 7, 2, 5, 9, 7, 6, 6, 4, 8, 2, 8, 7, 6

a. Graph or plot the data in the space provided. Include appropriate labels.
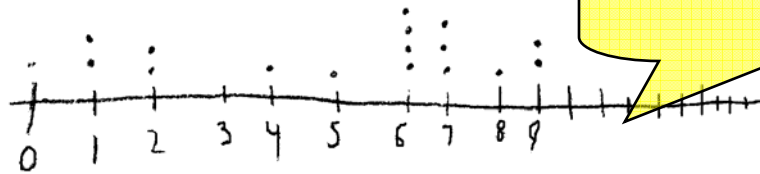
Appropriate Graph

**Demonstrates
Basic Use of Thinking Skills**

b. How many students gained more than six points? *Show or explain how you found your answer.*   7 I couted how many students gained more than Six Points

c. Find the mean, median, mode, and range for the given data. *Show or explain how you found your answers.* mean = 94
median = 9,7,6,1,2
mode = 9 and 7

**Minimal Evidence
Of Understanding
Of Situations**

**Inadequate Mathematical
Vocabulary**

d. Using the information above, which is the best indicator (mean, median, or mode) of the students' performances? *Why? (Show or explain how you found your answer.)* median because most of the isat scores is in the median

3. Mrs. Kelly wants to tile her kitchen floor. Use the diagram below to answer the questions that follow.

20 ft.

8 ft.

Mrs. Kelly's Kitchen Floor

12 ft.

12 ft.

8 ft.
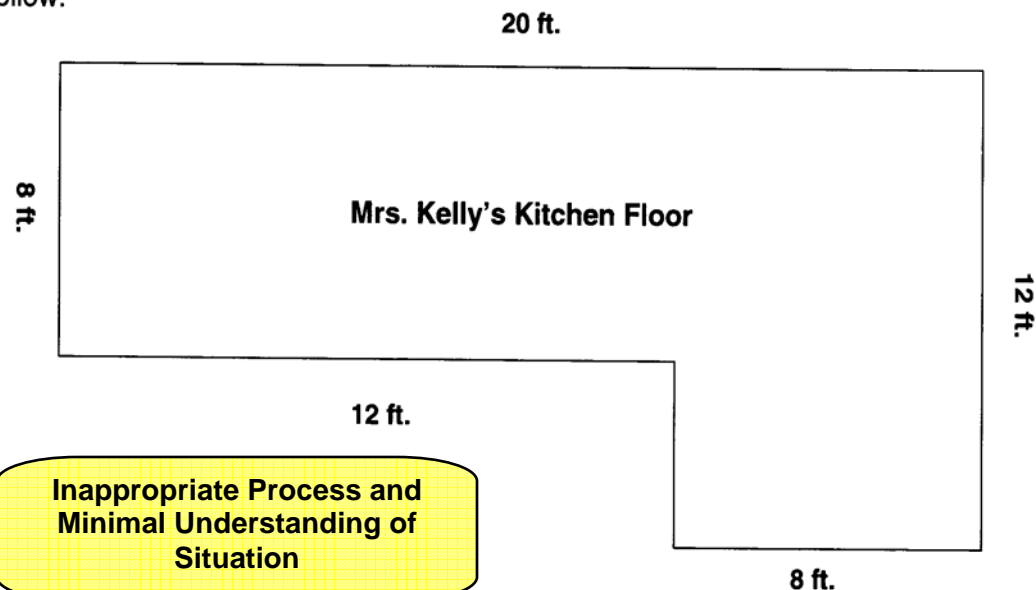
> **Inappropriate Process and Minimal Understanding of Situation**

a. What is the total area that needs to be tiled? *Show or explain how you found your answer.*

$$60 \text{ ft} \qquad 8 + 20 + 12 + 8 + 12 = 60$$

b. If the tiles are 6-inch squares, how many tiles will Mrs. Kelly need to purchase? *Show or explain how you found your answer.*

$$360 \qquad \begin{array}{r} 60 \\ \times\ 6 \\ \hline 360 \end{array}$$

> **Minimal Problem-Solving Strategy**

c. Each box contains 35 tiles. How many boxes will Mrs. Kelly need to purchase? *Show or explain how you found your answer.*

$$9 \text{ boxes} \qquad 35\overline{)360}$$

> **Minimal Development of Basic Skills (Division)**

d. If each box costs \$52.50, what will be the total cost of the tiles? What would be the cost including a 5% sales tax? *Show or explain how you found your answers.*

$$\$472.5 \qquad \begin{array}{r} 52.50 \\ \times\ \ \ \ 9 \\ \hline 472.50 \end{array}$$

> **Lack of Process Development**

Minimal Understanding Of The Situation

4. Jamie's cell phone company, XYZ Cellular, charges $20.00 per month plus 5 cents for each minute of calling time.

    a. Use *m* to represent the number of minutes. Write an expression for Jamie's total monthly cell phone charge. *Show or explain how you found your answer.*

$$M = \$20.00 \times 5$$

Inadequate Use of Symbols

    b. How much will Jamie have to pay in October if she talks for one hour and 50 minutes? *Show or explain how you found your answer.*

$$30 \qquad \begin{array}{r} 20.00 \\ \times 1.50 \\ \hline \end{array}$$

Minimal Use of Basic Thinking Skills

    c. Jamie is thinking about changing to Lakeside Cellular, which charges 20 cents per minute of calling time and no monthly fee. How much would her October charge have been if she had been using this new company? *Show or explain how you found your answer.*

$$25 \qquad 5\overline{)20}$$

    d. For October, which of these two companies would save her the most money? How much money would she save? *Show or explain how you found your answers.*

$$\text{lakeside cellular} \; \$5.00 \qquad \begin{array}{r} 30 \\ -25 \\ \hline 5 \end{array}$$

Significant Lack of Structure

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5. Each student in Mrs. Smith's class received a bag of candy. They counted the candy in their bags. Joe had 50 candies, Sally had 62, David had 55, Heather had 57, and Tia had 60.

    a. Joe had the following candies in his bag: 7 brown, 5 orange, 6 yellow, 10 red, 8 green, and 14 blue. What is the probability that Joe will pick a <u>red</u> M&M out of his bag? *Show or explain how you found your answer.*

    b. What is the probability that the first candy Joe picks out of his bag will be <u>yellow</u> **or** <u>green</u>? *Show or explain how you found your answer.*

    c. If Joe eats one red candy, what is the probability that the next candy he picks out of his bag will be brown? *Show or explain how you found your answer.*